

**What is Claimed is:**

1. A program recording apparatus comprising:
  - a program information input means for inputting program information concerning programs;
  - a program recording setting means for the setting of the recording of programs;
  - a recording means for writing in, and erasing, data containing the contents of said programs to and from a recording medium; and
  - a management means for storing program information which is inputted from said program information input means and for recording said programs by said recording means according to said setting for recording or independent of said setting for recording,

wherein the program recording apparatus is characterized in that, at the point in time when said program recording setting means sets the recording of a program, said management means predicts a shortage of vacant space in said recording medium at the point in time when said recording means carries out the writing in of the data containing the contents of said program, of which the recording is set, to said recording medium by referring to program management information which includes, at least, said program information, the recording status of said recording medium and recording setting status of said programs and in the case that said vacant space is in shortage, decides the programs

to be erased at the point in time when said writing in is carried out among the programs which have already been recorded or which have already been set for recording according to a predetermined criteria which includes a criterion concerning the erasure possibility at the point in time when said writing in of the program is carried out.

2. A program recording apparatus comprising;

a program information input means for inputting program information concerning programs;

a program recording setting means for setting the recording of programs;

a recording means for writing in and erasing data containing the contents of said programs to and from a recording medium; and

a management means for storing program information inputted from said program information input means and for recording said programs by said recording medium according to said setting for recording or independent of said setting for recording,

wherein the program recording apparatus is characterized in that at the point in time when a recording indication is given, said management means recognizes a shortage of vacant space in said recording medium by referring to program management information which includes, at least, said program information, recording status of said recording medium and recording setting

status of said programs and in the case that said vacant space is in shortage, determines the programs to be erased at the point in time when said writing in is carried out among the programs which have already been recorded and which have already been set for recording according to a predetermined criteria which includes a criterion concerning the erasure possibility at the point in time when said writing in of the program is carried out.

3. A program recording apparatus according to either of Claims 1 or 2 characterized in that said determination of programs to be erased is carried out by utilizing a criterion concerning said program management information and said erasure possibility.

4. A program recording apparatus according to Claim 3 characterized in that said determination of the programs to be erased is carried out, by utilizing a history of recording operation which is carried out, by said recording means.

5. A program recording apparatus according to either of Claims 1 or 2 characterized in that said determination of the erasure possibility of the programs or said determination of the programs to be erased is carried out by utilizing any of broadcast start date and time, broadcast time, number of viewings and types of said programs which have been recorded or have been set for recording.

6. A program recording apparatus according to either of Claims 1 or 2 characterized in that the criterion concerning said erasure possibility in said predetermined criteria is set for

each of the types of said programs.

*A*  
*A*

7. A program recording apparatus according to ~~any of Claims~~  
~~1 or 2~~ <sup>either of Claims</sup>  
~~1 to 6~~ characterized in that said predetermined criteria can be freely changed.

*A*  
*A*

8. A program recording apparatus according to ~~any of Claims~~  
~~1 or 2~~ <sup>either of Claims</sup>  
~~1 to 6~~ characterized in that said program information is electronic program information.

*A*  
*A*

9. A program recording apparatus according to ~~either of~~  
~~Claims 5 or 6~~ characterized in that said types are determined based on the information included in electronic program information and/or the information inputted by the user.

10. A program recording apparatus according to either of Claims 1 or 2 characterized in that an indication of cancellation of said setting for recording by the user is necessary in order to cancel the setting for recording of said programs which have been set for recording of which the criterion concerning said erasure possibility is non-erasable.

11. A program recording apparatus comprising:  
a program information input means for inputting program information concerning programs;  
a program recording setting means for setting the recording of programs;  
a recording means for writing and erasing data containing contents of said programs on a recording medium; and  
a management means for storing program information

inputted from said program information input means and for recording said programs by said recording means according to said setting for recording and independent of said setting for recording,

wherein said program recording setting means can carry out a comprehensive setting for recording which makes a plurality of pairs of recording/erasing operations; and

in the case that a recording of a program which belongs to a program/group comprising programs which have been comprehensively set for recording is carried out, said recording means may carry out the recording by erasing the programs which have, already, been recorded before the recording is carried out and which belong to said program group.

12. A program recording apparatus according to Claim 11 characterized in that in the case that a recording of a program belonging to said program group is carried out, said recording means carries out the recording by erasing the programs belonging to said program group, which have already been recorded before the recording is carried out.

13. A program recording medium characterized by the recording of programs and/or data in order to make a computer carry out the entire, or part of, the functions of the entire, or part of, the means of the present invention according to any <sup>1, 2, 11 or 12</sup> of Claims ~~1 to 12~~, and characterized by being readable by computer.

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